

CLAIMS

We Claim:

1 1. An adjustable seating height wheelchair, comprising:
2 a wheelchair frame providing structural support for the
3 wheelchair;
4 a plurality of wheels, attached to the frame, for allowing the
5 wheelchair to roll;
6 a seating surface, for providing a seat for a user of the
7 wheelchair; and
8 an adjustable seating height mechanism, for mechanically
9 moving the seating surface between at least two height levels, the
10 adjustable seating height mechanism including:
11 a pneumatic device which may be extended and retracted
12 under pneumatic pressure, the pneumatic device coupled to the
13 adjustable seating height mechanism such that when extended,
14 the pneumatic device raises the adjustable seating height
15 mechanism to one of the at least two height levels, and when
16 retracted, lowers the adjustable seating height mechanism to
17 another of the at least two seating height levels,
18 a pneumatic storage tank, coupled to the pneumatic
19 device, for storing a gaseous fluid under pressure and
20 providing pressurized gaseous fluid to the pneumatic device to
21 extend the pneumatic device, and

22 a control valve, coupled to the pneumatic storage tank
23 and the pneumatic device, for controlling the flow of the
24 gaseous fluid under pressure to and from the pneumatic device
25 such that when actuated, the pneumatic device may be
26 controllably extended and retracted.

1 2. The adjustable seating height wheelchair of claim 1,
2 further comprising:

3 a fill valve, coupled to the pneumatic storage tank, for
4 allowing the pneumatic storage tank to be periodically recharged.

1 3. The adjustable seating height wheelchair of claim 1,
2 further comprising:

3 at least one locking pin, coupled to the adjustable seating
4 height mechanism, for locking the adjustable seating height
5 mechanism at at least one of the two seating height levels.

1 4. The adjustable seating height wheelchair of claim 1,
2 further comprising:

3 a pump, mounted to the wheelchair, for recharging the
4 pneumatic storage tank.

1 5. The adjustable seating height wheelchair of claim 1,
2 wherein said adjustable seating height mechanism further comprises
3 a scissors lift coupled between the frame and the seating surface,
4 to uniformly lift the seating surface while maintaining the seating
5 surface in a horizontal position.

1 6. The adjustable seating height wheelchair of claim 1,
2 wherein said pneumatic device further comprises a pneumatic
3 cylinder.

1 7. The adjustable seating height wheelchair of claim 1,
2 wherein said pneumatic device further comprises an air bag.

1 8. A method of adjusting the seating height of a wheelchair
2 comprising a wheelchair frame providing structural support for the
3 wheelchair, a plurality of wheels, attached to the frame, for
4 allowing the wheelchair to roll, a seating surface, for providing
5 a seat for a user of the wheelchair, and an adjustable seating
6 height mechanism, the method comprising the steps of:

7 storing, in a pneumatic storage tank, coupled to the pneumatic
8 device, a gaseous fluid under pressure,
9 extending and retracting a pneumatic device under pneumatic
10 pressure supplied by the pneumatic storage tank, the pneumatic
11 device coupled to adjustable seating height mechanism such that
12 when extended, the pneumatic device raises the adjustable seating
13 height mechanism to one of the at least two height levels, and when
14 retracted, lowers the method of adjusting the seating height
15 mechanism to another of the at least two seating height levels, and
16 controlling, with a control valve, coupled to the pneumatic
17 storage tank and the pneumatic device, the flow of the gaseous
18 fluid under pressure to and from the pneumatic device such that
19 when actuated, the pneumatic device may be controllably extended
20 and retracted.

1 9. The method of adjusting the seating height of a wheelchair
2 of claim 8, further comprising the step of recharging the pneumatic
3 storage tank with a fill valve, coupled to the pneumatic storage
4 tank recharged.

1 10. The method of adjusting the seating height of a
2 wheelchair of claim 8, further comprising the step of locking, with

3 at least one locking pin coupled to the adjustable seating height
4 mechanism, the adjustable height mechanism to at least one of the
5 two seating height levels.

1 11. The method of adjusting the seating height of a
2 wheelchair of claim 8, further comprising the step of recharging
3 the pneumatic storage tank using an on-board pump coupled to the
4 wheelchair.

1 12. The method of adjusting the seating height of a
2 wheelchair of claim 8, further comprising the step of uniformly
3 lifting the seating surface while maintaining the seating surface
4 in a horizontal position using an adjustable seating height
5 mechanism includes a scissors lift coupled between the frame and
6 the seating surface.

1 13. The method of adjusting the seating height of a
2 wheelchair of claim 8, wherein the pneumatic device further
3 comprises a pneumatic cylinder.

14. The method of adjusting the seating height of a wheelchair of claim 8, wherein the pneumatic device further comprises an air bag.